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**Meeting Minutes Transmittal/Approval
Unit Managers' Meeting
100 Area Remedial Action and Waste Disposal Unit/Source Operable Unit
3350 George Washington Way, Richland, Washington
January 2000**

APPROVAL:  Date 3/20/00
Glenn Goldberg/Chris Smith, 100 Area Unit Managers, RL (H0-12)

APPROVAL:  Date 3-29-00
Wayne Soper, 100 Aggregated Area Unit Manager, Ecology (B5-18)

APPROVAL:  Date 3-21-00
Dennis Faulk, 100 Aggregate Area Unit Manager, EPA (B5-01)

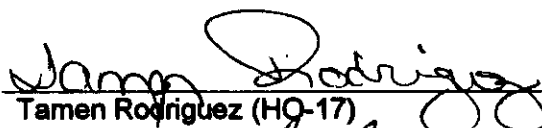
APPROVAL:  Date 3/21/00
Rick Bond, 100-N Area Unit Manager, Ecology (H0-18)

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Meeting minutes are attached. Minutes are comprised of the following:

Attachment 1	--	Agenda
Attachment 2	--	Attendance Record
Attachment 3	--	100 Area UMM Minutes -- January 2000
Attachment 4	--	Regulatory Document Review Planning Schedule
Attachment 5	--	Status of CVPs to be Prepared in FY00
Attachment 6	--	Samples for UMM Discussion
Attachment 7	--	Draft Summary of Qualitative Risk Assessment Methodology
Attachment 8	--	116-M-1 TSD Piping
Attachment 9	--	Radiological Downposting at 100-BC Group 1 Sites Letter
Attachment 10	--	Backfill Concurrence Checklist for 116-B-9
Attachment 11	--	Backfill Concurrence Checklist for 116-B-6B
Attachment 12	--	Backfill Concurrence Checklist for 116-B-2
Attachment 13	--	Backfill Concurrence Checklist for 116-B-4
Attachment 14	--	Backfill Concurrence Checklist for 116-B-10
Attachment 15	--	Backfill Concurrence Checklist for 116-B-12
Attachment 16	--	Backfill Concurrence Checklist for 116-B-6A/16
Attachment 17	--	Backfill Concurrence Checklist for BC Group 3 Overburden

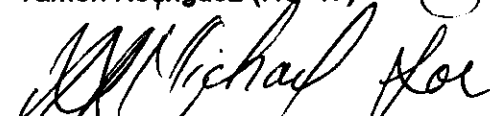
Prepared by:


Tamen Rodriguez (HO-17)

Date

3/29/00

Concurrence by:


Vern Dronen, BHI Remedial Action and Waste Disposal Project Manager
(HO-17)

Date

3/29/00

UNIT MANAGERS MEETING AGENDA

3350 George Washington Way, Room 1B45

January 20, 1999

1:00 – 4:00 p.m. 100 Area 2A01

General

- Status of the NRRB comments on the Burial Grounds
- Status of Regulator Comments on the Burial Grounds FFS/PP
- Regulatory Document Review Planning (Regulator Schedule)
- Status of 100 Areas RDR/RAWP and SAP
- CVPs -- General Status
- CVPs -- General EPA comments on CVPs in EPA Review
- White paper on risk assessment (requested at December UMM)
- Applicability of MTCA 3-point test to Deep Zone data
- Incorporation of DQA calculation brief package in CVPs
- Conversion to new RESRAD version

100 H, F and K

- Arsenic Levels at 1607 H2 & H4. Evaluation of Local Background Concentrations
- 100 H Deep Vadose Zone Characterization
- 100 F Deep Vadose Zone Characterization
- Remedial Action Progress/Status
- Group 4 TPA Milestone Change Package
- 126-F1 Ash Pit Tech Demo, Site Process Knowledge-Historical Review, Path Forward

100N

- Status of the 100-N TSD ROD
- Status of 100-N RDR/RAWP and SAP
- Status of Remedial Action Procurement, Design, Other
- N well decommissioning waste
- N1 Pipeline Scope for Remedial Action

100-B/C and D

- Radiological Downposting at BC Group 1 Sites (116-C1, et al.)
- Remedial Action and D&D near reactor coordination requirements at D/DR
- Incorporation of BC Group 3 backfill concurrence checklists into Administrative Record
- Incorporation of 116-D-7 backfill concurrence checklist into Administrative Record
- Datum for Deep/Shallow Zone – Pipelines, North of 116-D7
- Status/Plan for 116-D-3. WIDS closeout form "rejecting" D3 as a site.
- Status/Plan for 116-DR-3.

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**MEETING MINUTES
REMEDIAL ACTION AND WASTE DISPOSAL
UNIT MANAGERS' MEETING --100 AREA
January 20, 2000**

Attendees: See Attachment #2

Agenda: See Attachment #1

General

- **Status of the NRRB comments on the Burial Grounds** – EPA reported that there was one major comment from the NRRB review of the Burial Grounds Focused Feasibility Study/Proposed Plan (FFS/PP).). The NRRB expressed concern over the use of 15-mrem/yr cleanup standard as basis for protectiveness determination. The board felt that using 15mrem/yr during the cleanup was acceptable, but remedial action objectives should be more specific with regard to residual risk. The FFS/PP for the 300 FF-2 Operable Unit received a bigger variety of comments, but the focus of the NRRB review for the 100 Area documents was on the residual risk.
- **Status of Regulator Comments on the Burial Grounds FFS/PP** - EPA and Ecology both plan to provide comments to RL on the Burial Grounds documents in the next two weeks. EPA stated that their comments include a need for accompanying text in document life cycle cost tables. Both EPA and Ecology stated that they felt the document appeared to be bias toward containment as the preferred remediation method for burial grounds. They both felt that the variety of remediation alternatives needed to be analyzed in a more objective manner.

Also, EPA stated that DOE recently sent a letter to the NRRB, requesting that previously agreed-upon cleanup levels be reviewed. EPA expressed concern that DOE wished to review criteria that was already agreed on and was being used in current documents. EPA and Ecology both reiterated their commitment to review documents such as the Burial Grounds FFS/PP, but that any submitted items that were not in alignment with the NRRB comments needed to be discussed.

- **Regulatory Document Review Planning (Regulator Schedule)** - A schedule (Attachment 4), organized by area, and providing a list of documents that will require regulator review for the October, 1999 to December 2000 timeframe, was provided to the regulators.
- **Status of 100 Areas RDR/RAWP and SAP** – ERC will provide the regulators with revised versions of these documents on 1/25/00. EPA requested that ERC provide a timeframe for when the Confirmatory Sampling SAP would be submitted, so it can be fitted in to EPA's review schedule. ERC asked if the regulators would like to look at sampling data prior to ERC's completed analysis. The regulator review would compare current data results against pre-remediation data to review the success of the remediation activities to date. EPA stated that they would prefer to wait for ERC to complete analysis of the data, and did not desire to review it until the end of the process.
- **CVPs – General Status** - ERC provided EPA with a general status handout on the CVP documents (Attachment 5). ERC also provided EPA with a sample of the CVPs risk section format (Attachment 6) and asked EPA to provide comments. EPA will review the sample and provide comments. EPA also requested that ERC provide Internet information on how

EPA could obtain the latest version of RESRAD software. ERC stated that, although they have recently adopted a newer version, the only noticeable results difference is when the time factor for dose is employed. EPA agreed to use the newer version of the software when reviewing CVP documents, once ERC provided information on how to obtain the software.

- White paper on risk assessment (requested by EPA at December UMM) – ERC provided EPA and Ecology with a one-page white paper (Attachment 7) for review and future comment.
- ERC briefly discussed the applicability of MTCA three point test to Deep Zone data. To pass MTCA standards, Shallow Zone sample data must meet three different criteria. ERC stated that, although this three-point test does not apply to Deep Zone data at this time, ERC has some data results from the Deep Zone that would fail the MTCA three-point test. Ecology has expressed interest in applying the three point MTCA test to the Deep Zone data. EPA deferred to Jerry Yokel of Ecology (not present) for clarification of this issue.
- Incorporation of DQA calculation brief package in CVPs – Regarding the change of Tri-Party Agreement milestone dates for site remediation, EPA stated their preference to renegotiate dates formally rather than receiving a letter from DOE that moved the dates out. EPA requested specific schedule and cost information for the remediation at 100 B/C and 100 D since remediation was initiated. EPA would like data that also shows what site plumes have been identified, and the associated actual and projected costs for remediation. EPA explained that they wished to verify that remediation work remains adequately funded, and budget cuts have not become a factor. ERC agreed to provide this information. EPA and ERC agreed to meet next week to discuss this information, and obtain EPA approval of the milestone change package.
- Conversion to new RESRAD version – discussed under CVPs.

100 H, F and K

- Arsenic Levels at 1607-H2 & 1607-H4 – ERC discussed the evaluation of local background concentrations of arsenic in the sites. The two septic sites, both located north of the H reactor building, were both remediated in November 1999 and had no radiological contamination of concern. However, elevated arsenic was detected, mainly in the overburden of the two sites. The arsenic appears to be associated with the near surface soils and not with the actual waste site. It was common practice throughout the orchard industry to utilize lead arsenic pesticide. Orchards were predominant Pre-Hanford industry in the 100 F and H areas. ERC and Ecology met to determine acceptable administrative ways to account for this elevated arsenic and establish a method to deal with arsenic readings at 100-H waste sites. ERC and Ecology are still working to resolve the process regulatory issues. EPA's stated initial idea would be to establish new background for arsenic in the historic orchard areas located within the 100 F Operable Unit.
- 100 H Deep Vadose Zone Characterization - ERC has originally planned a combined 100 F, K and H DQO document, but will issue a DQO document for the 100 H Area deep vadose zone characterization only, in support of the upcoming borehole activity at H. ERC discussed the borehole activity and associated costs.
- 100 F Deep Vadose Zone Characterization – EPA indicated the need for Deep Vadose Zone characterization would be determined once 100 F has been remediated.

- **Remedial Action Progress/Status** - ERC generally discussed the progress in both the 100-H waste sites and the pipelines. As completion of the 100-H baseline work approaches, ERC is identifying plumes associated with the remediated H sites. EPA stated that, in public meetings, attendees favored allowing contamination levels that would decay below cleanup levels by 2018, instead of actively remediating these levels of contaminants. Public input reflected a desire to balance using current soil remediation activity with natural decay to achieve acceptable exposure limits by 2018. ERC stated that the analytical data for the 116-C-1 site had been reviewed, to see the results if contamination at this "decay specific activity" had been left in place rather than removed. ERC took the action to provide this analysis to EPA, to see if natural decay could acceptably reduce the amount of remediation that is currently being performed.
- **Group 4 TPA Milestone Change Package** - Attendees discussed that a separate meeting will be scheduled to discuss the change package. EPA did not agree with identifying the plume volumes ahead of time. EPA would prefer to evaluate the TPA milestone changes as plumes are identified. Pre- estimating the plumes would be acceptable if the volumes in the RDR were revised to reflect the estimated plume size.
- **126-F1 Ash Pit Tech Demo, Site Process Knowledge-Historical Review, Path Forward** – ERC displayed a site map of data points, which indicated that the present site contamination is, in great part, accounted for by naturally occurring radiological elements within the ash. ERC is evaluating the information and will issue a report. The report will be used to develop strategy on how ERC will close out the areas of the ash pit that are apparently below contamination levels of concern. The strategy will be conducted in accordance with the "clean sites" closeout strategy that ERC recently adopted.

100 N

- **Status of the 100-N TSD ROD** – DOE and Ecology have both signed the document.
- **Status of 100-N RDR/RAWP and SAP** – ERC will transmit the revised documents to the regulators on 2/20/00.
- **Status of Remedial Action Procurement, Design, Other** – ERC is still working on the issue of the project's proper radiological safety basis classification. However, the Request for Proposal was issued and subcontractor bids for the 100-N project are due back in February. ERC requested that Ecology needs to sign the waste designation form for well decommissioning.
- **100-N-1 Pipeline Scope for Remedial Action** – ERC provided a handout describing the 116-N-1 TSD pipeline issues (Attachment 8). ERC will prepare a formal letter, from DOE to Ecology, requesting the deletion of some pipeline scope. The pipeline to be deleted is located next to the 116-N-2 site (known as the "Golfball" site).

100 B/C and D

- **There are currently seven CVP documents for B/C and D sites in review with the regulators.** ERC will add discussion of radiological risk back in to CVP documents during revisions. DOH discussed some comments from the review of these CVP documents. DOH stated that data needs to be presented in a more logical fashion, so it can be followed with ease between tables in the data set. Also, if data results fall below a constituent's Minimum Detectable Activity (MDA) value, then the MDA value will serve as the default value for the site. However, CVP packages do not currently provide constituent MDA values. DOH

would like to see these MDA values included in a footnote to provide a default value if applicable. DOH also stated that CVP quality control language makes statements that are not consistent with the data shown in the tables. For example, some contaminants of concern (COCs) were not listed but were present in both variance analysis calculations and in the site. Also, one CVP document did not have any radiological COCs but contained statements about radiological constituents in the CVP text.

- Radiological Downposting at BC Group 1 Sites (116-C1, et al.) – ERC provided a handout that included some DOE and ERC letters on this issue (Attachment 9). ERC is working with DOE to resolve downposting issues such as deed restriction on the land use and the use of groundwater. Attendees agreed that they would look for solutions to avoid such restrictions on the radiological downposting of these areas.
- Remedial Action and D&D near reactor coordination requirements at D/DR – not discussed.
- Incorporation of BC Group 3 backfill concurrence checklists into Administrative Record - EPA provided DOE with the signed backfill concurrence forms for the following sites: 116-B-9 (Attachment 10), 116-B-6B (Attachment 11), 116-B-2 (Attachment 12), 116-B-4 (Attachment 13), 116-B-10 (Attachment 14), 116-B-12 (Attachment 15), 116-B-6A/16 (Attachment 16), and the BC Group 3 Overburden (Attachment 17).
- Incorporation of 116-D-7 backfill concurrence checklist into Administrative Record – not discussed.
- Datum for Deep/Shallow Zone – Pipelines, North of 116-D7 – not discussed.
- Status/Plan for 116-D-3. WIDS closeout form "rejecting" D3 as a site – not discussed.

Status/Plan for 116-DR-3 – not discussed

101040	116-DR-9Retention Basin	21	01DEC89*	29DEC89
101240	116-B-1 Trench	21	01DEC89*	29DEC89
101250	116-B-4French Drain	21	01DEC89*	29DEC89
101260	116-B-9French Drain	21	01DEC89*	29DEC89
101270	116-B-10Dry Well	21	01DEC89*	29DEC89
101280	116-B-3Crib	21	01DEC89*	29DEC89
101290	116-B-2Fuel Storage Basin	21	01DEC89*	29DEC89
101310	116-B-6BCrib	21	01DEC89*	29DEC89
101320	116-B-12Crib	21	01DEC89*	29DEC89
101330	116-C-2A/BCCrib, 2B Pump Stn, and 2C	11	05JAN00*	19JAN00
101300	116-B-6A/B-16Crib & Storage Tanks	11	08FEB00*	22FEB00
101030	116-D-7Retention Basin	30	29FEB00*	10APR00
101400	100-H-24151-H Substation	24	18APR00*	19MAY00
101010	107-D5(100-D-04) Sludge Disposal Tre	11	01MAY00*	15MAY00
101070	East Pipelines - D Area	11	01MAY00*	15MAY00
101080	West Pipelines - D Area	11	01MAY00*	15MAY00
101090	2 P/L O/B Piles - D Area	11	01MAY00*	15MAY00
101340	1607-H-2Septic Tank	11	09MAY00*	23MAY00
101350	1607-H-4Septic Tank	11	18MAY00*	01JUN00
101020	116-DR-1&2Site Trench	31	30MAY00*	11JUL00
101060	Sanitary Pipelines	11	01JUN00*	15JUN00
101370	116-H-7Retention Basin	11	01JUN00*	15JUN00
101410	116-H-2Trench	11	01JUN00*	15JUN00
101150	116-D-2Crib	11	07JUN00*	21JUN00
101190	116-D-9Crib	11	07JUN00*	21JUN00
101110	116-D-4French Drain	11	14JUN00*	28JUN00
101170	100-D-12NaCr2 Station	11	15JUN00*	28JUN00
101160	116-D-3French Drain	31	23JUN00*	04AUG00
101230	116-DR-7Inkwell Crib	11	27JUN00*	11JUL00
101390	100-H-17Thimble Burial	12	06JUL00*	21JUL00
101200	116-DR-3Storage Basin Trenches	11	13JUL00*	27JUL00
101140	116-D-8French Drain	11	24JUL00*	07AUG00
101220	116-DR-6Liquid Disposal Trench	11	31JUL00*	14AUG00
101050	North Effluent Pipelines	11	01AUG00*	15AUG00
101100	100-D-PL Group 3 Pipelines	11	01AUG00*	15AUG00
101380	116-H-5Sludge Disposal Trench	11	01AUG00*	15AUG00
101130	116-D-1BStorage Basin Trenches	11	10AUG00*	24AUG00
101210	116-DR-4Pluto Crib	11	10AUG00*	24AUG00
101180	100-D-52Drywell	11	11AUG00*	25AUG00
101120	116-D-1AStorage Basin Trenches	11	14AUG00*	28AUG00

**STATUS OF
CVPs TO BE APPROVED IN FY00**

Attachment 5

Site Designation	Site Type	Prepare Draft	Regulator Review	Prepare Rev. 0	Approved
BC Group 3 Sites					
116-B-4	French Drain	Complete	In Progress		
116-B-6B	Crib	Complete	In Progress		
116-B-9	French Drain	Complete	In Progress		
116-B-2	Fuel Storage Basin Trench	Complete	In Progress		
116-B-3	Crib	Complete	In Progress		
116-B-10	Dry Well	Complete	In Progress		
116-B-12	Crib	Complete	In Progress		
116-C-2A/B/C & OB	Crib/Pump Station	In Progress			
116-B-6A/B-16	Crib/Storage Tanks	In Progress			
D/DR Group 2 Sites					
116-D-7	Retention Basin	In Progress			
100-D-18 (107D4)	Sludge Disposal Trench	In Progress			
100-D-19	Sludge Pit				
116-DR-1&2	Trench	Sampling			
D/DR Group 2 Pipelines					
100-D-48:1/49:1	Group 2 North Pipelines	Excavating			
1607-D2	Group 2 Pipelines	Sampling			
100-D-49:2	Group 2 East Pipelines	In Progress			
100-D-48:2	Group 2 West Pipelines	In Progress			
100-D/DR	Group 2 P/L O/B Piles	In Progress			
D/DR Group 3 Sites					
116-D-3	French Drain	WIDS Site Closeout Activities			
116-D-4	French Drain	Sampling			
116-D-6	French Drain	Excavating			
116-D-1A	Storage Basin Trenches	Excavating			
116-D-1B	Storage Basin Trenches	Excavating			
116-D-9	Crib	Sampling			
116-D-2	Crib	Sampling			
116-DR-6	Liquid Disposal Trench	Excavating			
116-DR-4	Pluto Crib	Excavating			
100-D-12	NaCr2 Station	Excavating			
116-DR-3	Storage Basin Trench	Locating Site			
100-D-52	Drywell	Excavating			
116-DR-7	Inkwell Crib	Sampling			
D/DR Group 3 Pipelines					
100-D-Pipelines	Group 3 100-D Pipelines	Excavating			
100-DR-Pipelines	Group 3 100-DR Pipelines	Excavating			
D/DR Grp 3 O/B	Group 3 Pipeline Overburden				
H Group 4 Sites					
1607-H-2	Septic Tank	Sampling			
1607-H-4	Septic Tank	Sampling			
116-H-1	107-H LW Disposal Trench	Excavating			
116-H-7	Retention Basin	Excavating			
100-H-5	Sludge Disposal Trench	Excavating			
100-H-17	Overflow Area				
100-H-21	H Reactor Pipelines	Excavating			
100-H-24	151-H Substation	Excavating			
116-H-2	110-H Trench				
100-H-2	Thimble Guide Rod Pit				
100-H-30	Sewage Pit				
116-H-3	French Drain				
F Group 4 Sites					
100-F-2	PNNL Strontium Garden				

Status Date: 1/20/00 8:49 AM

APPROVED CVPs

Attachment 5

Site Designation	Site Type	Regulator Signoff on WIDS Form	Processed by ERC WIDS Group
BC Group 3 Sites			
116-B-8	Basin Sludge Burial Pit	7/22/99	Complete
116-B-5	Crib, Trench	1/8/97	Complete
116-B-13	South Sludge Trench	7/22/99	Complete
116-B-14	Trench	7/22/99	Complete
116-C-1	Retention Basin	1/21/99	Complete
116-B-1	Trench	12/8/99	Complete
116-B-11	Retention Basin	12/8/99	Complete
116-C-5	Retention Basin	12/8/99	Complete
D/DR Group 2 Sites			
120-D-1	100-D Ponds	8/27/99	Complete
100-D-4 (107D5)	Sludge Pit	3/25/99	Complete
100-D-20 (107D3)	Sludge Pit	3/25/99	Complete
100-D-21 (107D2)	Sludge Pit	3/25/99	Complete
100-D-22 (107D1)	Sludge Pit	3/25/99	Complete
1607-D-2	Septic Tank	11/23/99	Complete
1607-D2:1	Abandoned Tile Field	3/25/99	Complete
100-D-25	Unplanned Release	1/6/99	Complete
116-DR-9	Retention Basin	1/6/99	Complete
D/DR Group 2 Pipelines			
D/DR Group 3 Sites			
D/DR Group 3 Pipelines			
H Group 4 Sites			
116-H-6	Solar Evaporation Basins	5/13/97	Complete
F Group 4 Sites			

Status Date: 1/20/00 8:49 AM

DRAFT
Summary of Qualitative Risk Assessment Methodology

100 Area Unit Managers Meeting
January 20, 2000

The U.S. Department of Energy (DOE) performed qualitative risk assessments (QRAs) for 100 Area waste sites and groundwater to assess the relative magnitude of potential risks to human health and the environment. The primary objective of the QRAs was to determine if specific waste sites or the groundwater in any operable unit should be given a higher priority for cleanup actions.

The QRAs evaluated human health risk for two exposure scenarios defined as "frequent-use" and "occasional-use." These exposure scenarios used exposure parameters that were identical to those for the residential and recreational exposure scenarios defined in the EPA *Risk Assessment Guidance for Superfund* (RAGS) and repeated in the *Hanford Site Risk Assessment Methodology* (HSRAM). However, the QRAs considered only five major exposure pathways: soil ingestion, fugitive dust inhalation, inhalation of volatile organic compounds from soil, external radiation exposure, and drinking water ingestion. By comparison, a rigorous baseline risk assessment would typically consider additional pathways, such as dermal absorption from water and soil, inhalation of VOCs from indoor water use, and ingestion of contaminated biota and foodstuffs, as appropriate.

For radionuclides, the external exposure pathway is generally the dominant in assessment of risk, except for strontium-90 where the produce-ingestion pathway dominates. However, in evaluation of total risk for multiple radionuclides at the waste sites found on the Hanford Site, inclusion of the produce ingestion pathway seldom makes a difference because external exposure risks from cesium-137, cobalt-60, and europium-152 exceed the strontium-90 produce ingestion pathway risk by several orders of magnitude. For nonradionuclides, the soil and water ingestion risk would be the same for the QRAs and a baseline risk assessment methodology because identical exposure parameters are used. Inhalation would be dependent on the differences in modeling used to predict air concentrations.

The ecological risk evaluation for the QRA is an abbreviated version of the baseline ecological risk assessment. The Great Basin pocket mouse was selected as the representative receptor for terrestrial waste sites. This mouse is relatively common in the terrestrial ecosystems of the Hanford Site and has a home range that is comparable to the size of many of the waste sites. Therefore, for assessing risk, the assumption was made that this mouse lives within the waste site and obtains all of its food from within the waste site. The food pathway is assumed to be the major exposure route. Risk to the mouse is estimated assuming that soil contaminants are taken up by plants, incorporated into plant tissue and seeds, and the seeds are subsequently eaten by the mouse. The mouse is also exposed to ionizing radiation from the radionuclides in soil. Risk to the mouse is expressed as an environmental hazard quotient that is the ratio of the dose (rad or nonrad) received by the mouse to a standard of 0.1 rad/day or the "no observable effect level" of the contaminants. Assessment of ecological risk for the groundwater was based upon a similar comparison of estimated dose to acceptable dose (ecological benchmarks) for aquatic receptors in the Columbia River.

CH2M HILL Hanford, Inc.

3190 George Washington Way
Richland, Washington 99352

Phone: (509) 375-9424
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cc: G Goldberg
R. Donahoe
F Lopez

FAX TRANSMISSION COVER SHEET

Date: Jan 18, 2000

To: Rick Bond / Ecology

Fax: 736-3030

Re: 116-N-1 Piping

Sender: Chuck Hedel / CH2M HILL

YOU SHOULD RECEIVE 5 PAGE(S), INCLUDING THIS COVER SHEET. IF
YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL.

Rick ~

Per email from Glenn earlier today, here
is text and figures for our request for deferring the
remediation + closure of 485' of piping at 116-N-1.

This will be on the agenda @ Umm on Thurs.

Rick -- if the 2 figures are not legible or
you need better quality copies, please call me
at ~~340-930~~ 372-9319.

Thx,
Chuck

Hedel, Charles W
From: Hedel, Charles W
Sent: Tuesday, January 18, 2000 8:50 AM
To: Goldberg, Glenn I
Cc: Corpuz, Franklin M; Donahoe, Richard L; ^BHI Document & Info Services
Subject: 116-N-1 TSD Piping

Glenn: Following up from our meeting with Ecology last week, please forward the attached message to Rick Bond RE: our recommendation for deferral of a portion of the 116-N-1 TSD effluent piping. I will see that you get a hard copy of the accompanying figures later today.

Thanks,

Chuck
 372-9319

Rick:

Thanks again for taking the time last week to discuss piping issues that we have identified during detailed design work for 116-N-1. As promised, the following is a brief description of the piping that we recommend for deferral in the permit and our justification. In parallel with this email, we will FAX to you 2 figures (maps) showing the piping we are discussing. Figure 1 shows all of the piping currently included in the scope of work for 100-NR-1 TSD sites remedial action. This includes all of the piping in the CMS along with piping included in WIDS. Figure 2 shows the piping which is included in the CMS proposed to be removed from the scope of work for the 100-NR-1 TSD sites remedial action. Because these figures are busy, I will make arrangements to have clean hard copies provided to you.

There are approximately 485 feet of piping listed in the CMS report that is closely associated with the 1310-N facility (a.k.a. the "golfball") that we recommend not be remediated as part of remedial actions currently planned for the 116-N-1 crib, trench, and associated piping. We recommend deferring the remediation of the 400 feet of piping until startup of remedial actions at 1310-N, which is planned for FY 2004, according to DOE/RL-97-22, Rev. 1, pp. A21/22 (Figure A-8). Such a deferral would require a modification of the permit to delay closure of 116-N-1 until the subject piping was remediated (beginning in FY2004). We recommend this deferral for the following reasons:

Safety: Much of the piping is as much as 45 feet deep and would require removal of the existing earth berm around the 1310-N facility and would result in a very large excavation. The berm presently provides radiological shielding from the golf ball and, if removed, would no longer serve this function and may be an unacceptable risk to those working in the area (e.g., the ERC warehouse staff and delivery staff). Workers would be exposed to dose from 1310-N during the pipeline removal, during backfill, and again when D/D work for the 1310-N facility is planned. Such avoidable repeated exposure to workers is not consistent with ALARA principles.

Best engineering judgement indicates that, due to the depth of required excavation and impact to surrounding structures, this is not a prudent action without removing all structures at the same time. Extensive shoring and bracing would be required to maintain the structural integrity of these interferences if the pipe were to be removed at this time. These activities are inherently more hazardous than removal of all interferences as you go and are considered unacceptable.

Lastly, the industrial hazards of associated with excavation to remove piping up to the 1310-N facility, backfilling, rebuilding the berm, and then re-excavating the same area again significantly increase the chances injury to workers that will essentially have double the exposure to heavy equipment and large cut slopes.

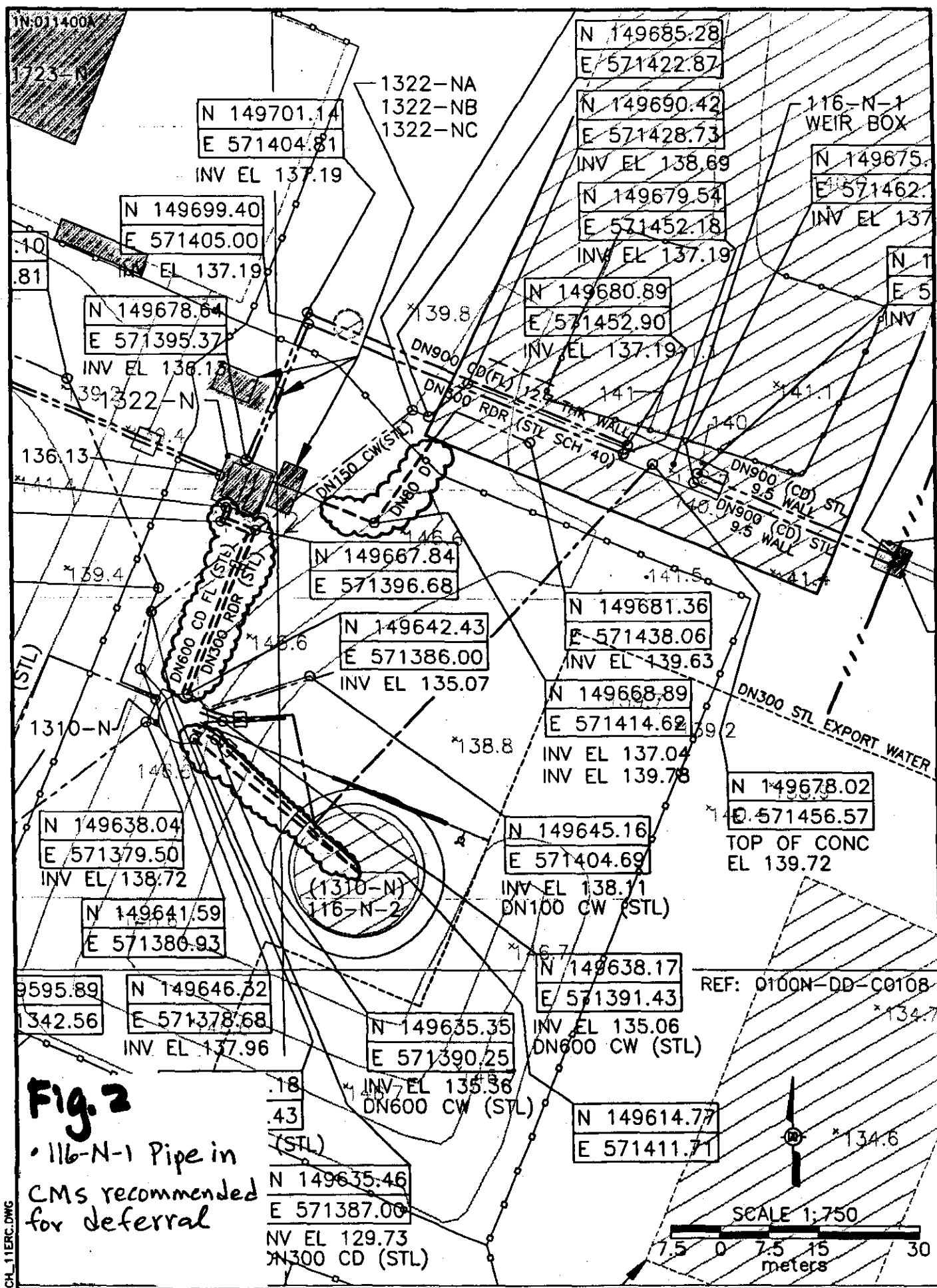
Cost: Excavation to remove piping up to the 1310-N facility, backfilling, rebuilding the berm, and then re-excavating the same area again for D/D of 1310-N (nearly one half of the 1310-N facility is below grade) is not a prudent use of limited financial and human resources. Redundant efforts such as this have been strictly avoided by Ecology and EPA in the past.

As we discussed at last week's meeting, there is precedent at Hanford for deferring portions of TSD units for later remediation and closure. For example, the 100-DR Large Sodium Fire Facility is a TSD Unit identified in the Hanford Facility RCRA Permit (Chapter 10). Closure activities for this unit were initiated in 1995 for various portions of the unit and received partial closure in October 1996. Closure activities of the remaining portions were deferred until D&D of the 105-DR Reactor (Dangerous Permit Application, Part A). The *Engineering Evaluation/Cost Analysis for the 105-DR and 105-F Reactor Facilities and Ancillary Facilities* (DOE/RL-98-23, Rev 0) identified the remaining closure activities as part of the Removal Action and is identified in the Action Memorandum for the 105-DR and 105-F Reactor Buildings and Ancillary Facilities.

Please review this information and discuss internally with other Ecology staff, as needed. We will raise the issue the recommendation for the deferral for discussion at the UMM.

Please feel free to call Rick Donahoe (372-9565) if you have any questions.

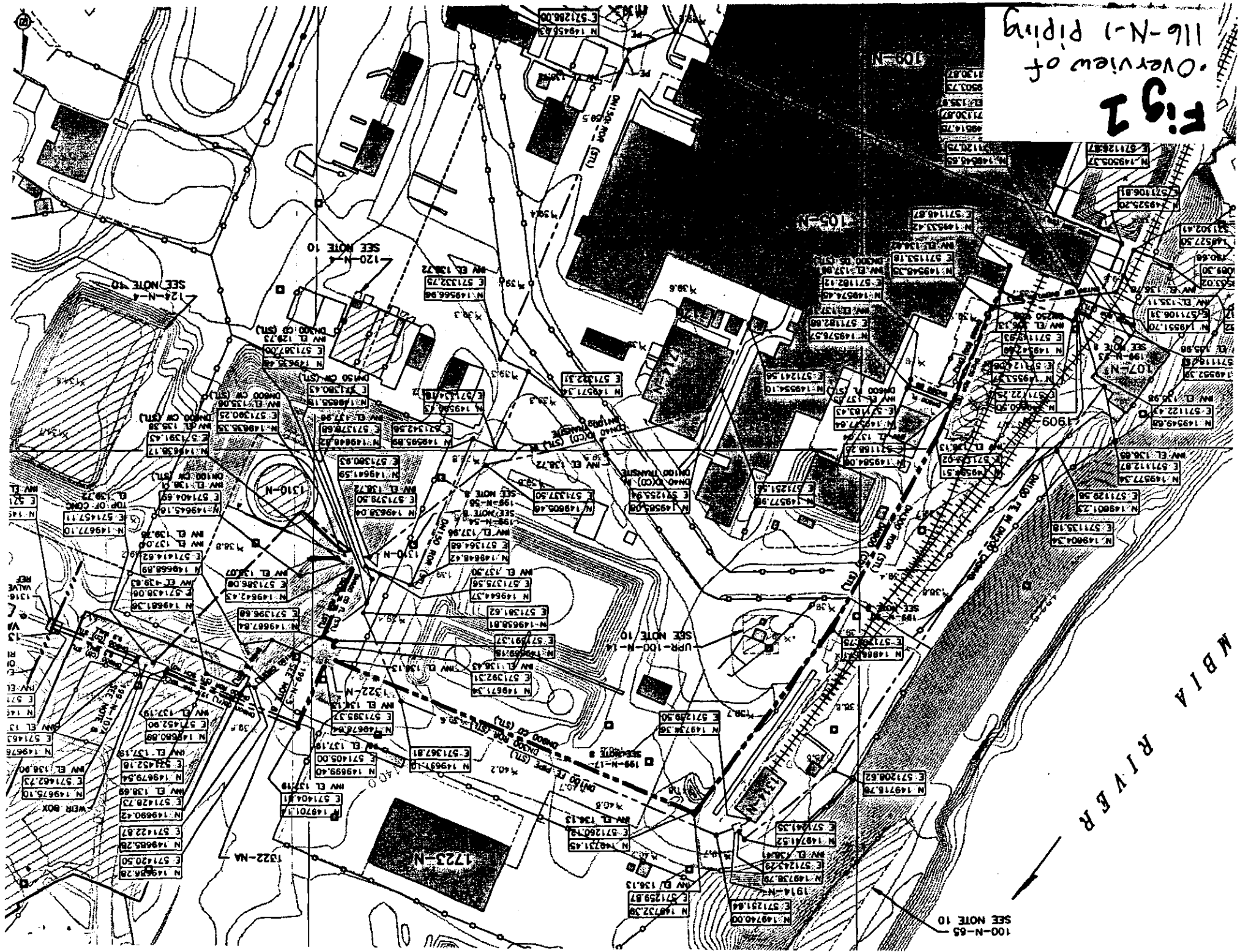
Chuck



Pipe in CM < To be removed from Sino

Figure 2

Fig 1
Overview of
116-N-1 Piping



CORRESPONDENCE COVER SHEET		IOM 060365
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**03/24/98, MEETING MINUTES - DOWN-POSTINGS SOIL CONTAMINATION AREAS
FOLLOWING COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND
LIABILITY ACT CLEANUP ACTIONS**

<u>From</u>	<u>Org</u>	<u>To</u>	<u>Org</u>	<u>cc</u>	<u>Closes</u>
TREICHEL, L	DOEH	BRUGGEMAN, JM	DDP	x	
		MCLEOD, RG	RAP		

<u>Area</u>	<u>Subject</u>	<u>OU</u>	<u>TSD</u>	<u>ERA</u>
300	4170	300-FF-1		
	5900			
	6420			

ACTION TRACKING					
<u>Owed To</u>	<u>Org</u>	<u>Due</u>	<u>Owed By</u>	<u>Org</u>	<u>Forecast</u>

DISTRIBUTION			
ERC Master File <input checked="" type="checkbox"/>	DOE Project File <input checked="" type="checkbox"/>	NON-Project File <input type="checkbox"/>	HR File <input type="checkbox"/>

DDP	
BRUGGEMAN, JM	H0-12
RAP	
MCLEOD, RG	H0-12
RPS	
ZEISLOFT, JH	H0-12

4 *[Signature]* *[Signature]*

DOE E 1325.8
(8-89)
EFO 107-801

United States Government

Department of Energy

memorandum

DATE: JUL 09 1998

060365

RECEIVED

JUL 15 1998

REPLY TO
ATTN OF: EM-44 (Lisa Treichel, 301-903-8177)

DOE-RL/DIS

SUBJECT: March 24, 1998, Meeting Minutes - Down-Postings Soil Contamination Areas Following Comprehensive Environmental Response, Compensation, and Liability Act Cleanup Actions

TO: Robert McLeod, Project Manager
Richland Operations Office

A teleconference meeting on the above subject was held on March 24, 1998, with Richland, Washington, and Headquarters (HQ) participants in both Washington, D.C. and Germantown, Maryland.

This memorandum documents the discussions and conclusions of the meeting between Bechtel Hanford, Inc. (BHI), the U.S. Department of Energy Richland Operations Office (DOE-RL), DOE Headquarters Environmental Restoration, Office of General Counsel, and Environmental Safety and Health Programs with environmental release and regulatory responsibilities. The principal discussion regarded the removal of Soil Contamination Area (SCA) signs from the 300-FF-1 operable unit.

Also discussed were:

- 1) the acceptability of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Record of Decision (ROD) as appropriate authority and criteria for the radiological release of real property;
- 2) the relationship of the CERCLA ROD to contractor's responsibility under DOE Order 5400.5; and
- 3) the posting requirements as outlined in 10 CFR 835, "Occupational Radiation Protection," and the DOE Radiological Control Manual as they relate to such sites.

It was decided that the Operations Office has the authority to review and accept data and records to support the acceptance and closure of the ROD, to determine that the cleanup criteria set forth in the ROD satisfies DOE 5400.5 requirements for restricted or unrestricted release, and to remove soil postings when these criteria are met. The DOE 5400.5 requirement to coordinate with DOE-HQ regarding authorized and supplemental limits has been satisfied by the DOE-HQ approval of the ROD, and the removal of the postings would also be conditional on adequate documentation being publicly available (e.g., placed in the public reading room).

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The group discussed the regulations, DOE Orders, and contractual requirements that contractors operate under and made the following clarifications:

- 1) It was agreed by all that the worker protection provisions of 10 CFR 835 apply to sites that are being actively remediated. It was also noted that 10 CFR 835 does not specifically address posting and access to SCAs.
- 2) The release of real and non-real property that may be radioactively contaminated is addressed in DOE Order 5400.5, "Radiation Protection of the Public and the Environment." Both the DOE Radiological Control Manual and the Hanford Site Radiological Control Manual stipulate that an area with contaminated soil not releasable in accordance with DOE Order 5400.5 must be posted as a SCA.
- 3) If a proposed CERCLA ROD containing the release criteria is first approved by the local Operations Office (in this case DOE-RL) and then reviewed and approved by DOE-HQ, the DOE-HQ approval of the release criteria is established by accepting the requirements of the ROD. No further action regarding release criteria by HQ is required. However, there must be information in the documentation supporting the ROD indicating that the DOE Order requirements (e.g., authorized limits and As Low As Reasonably Achievable (ALARA) process) were considered so that ROD criteria provide equivalent protection. This would normally be addressed by including DOE 5400.5 as a "To Be Considered" in the Applicable or Relevant and Appropriate Requirements section of the CERCLA Remedial Investigation/Feasibility Study and ROD. If not specifically addressed in supporting documents, DOE-RL needs to document by memo or other means that the ROD criteria are considered by DOE to be equivalent of surrogates for DOE 5400.5 limits and that the CERCLA process adequately addressed the DOE ALARA process requirements.
- 4) At the conclusion of the remedial activities, in this and all further instances, a data package to substantiate that the requirements of the ROD have been met must be completed by the contractor and reviewed and approved by other agencies as appropriate (e.g., Washington State Department of Ecology, U.S. Environmental Protection Agency).
- 5) Once the data package has been accepted by the reviewing authorities, the obligation under DOE Order 5400.5 has been satisfied. Such action would allow the postings to be removed by the contractor.

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Based on these conclusions, the local DOE field office has the authority to allow BHI to remove the SCA signs from areas verified and approved by the regulators as meeting ROD requirements, once all appropriate documentation has been assembled.



Lisa C. Treichel
Richland Team
Office of Northwestern Area Programs
Environmental Restoration

cc: David Brehm, BHI
Grant Ceffalo, BHI
Dale Denham, BHI
Dale Gergely, BHI
Jeff James, BHI
Roger Landon, BHI
Jeff Bruggeman, DOE-RL
Ed Parsons, DOE-RL
Patrick Willison, DOE-RL
Alexander Williams, EM-42
Don Mackenzie, EM-44
Jeanette Helfrich, GC-52
Hal Peterson, EH-41
Andy Wallo, EH-41
Joel Rabovsky, EH-52

CORRESPONDENCE COVER SHEET		IOM 062041
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SUBMITTAL OF SITE VERIFICATION DATA TO THE ADMINISTRATIVE RECORD FOR MISCELLANEOUS SITES IN THE 300-FF-1 AND THE 300-FF-2 OPERABLE UNITS

From	Org	To	Org	cc	Closes
MCLEOD, RG	RAP	DIS	BHI		
		GERTON, RE	RPS	x	
		HOLTEN, RA	RP	x	
		MCKAY, LR	AME	x	

Area	Subject	OU	TSD	ERA
300	4300	300-FF-1		
	8600	300-FF-2		

ACTION TRACKING					
Owed To	Org	Due	Owed By	Org	Forecast

DISTRIBUTION			
ERC Master File <input checked="" type="checkbox"/>	DOE Project File <input checked="" type="checkbox"/>	NON-Project File <input type="checkbox"/>	HR File <input type="checkbox"/>

AR
 ADMINISTRATIVE REC *w/2 of ea.*
 X
 SEE LETTER FOR DIST.

✓
5 HB
200 done

RL-F-1325.8 (02/96)

United States Government

Department of Energy

memorandum

Richland Operations Office

062041

DATE: SEP 17 1998

REPLY TO
ATTN OF: RAP:RGMSUBJECT: SUBMITTAL OF SITE VERIFICATION DATA TO THE ADMINISTRATIVE
RECORD FOR MISCELLANEOUS SITES IN THE 300-FF-1 AND THE 300-FF-2
OPERABLE UNITS

TO: Memorandum to File

The purpose of this memorandum is to insure that verification data and regulatory approval documentation is included in the administrative record for the Ash Pits, 300 Area Process Trenches, 300-44, 300-10, and 300-45 sites. The verification packages for these sites are attached. Also attached are the 300 NPL Agreement/Change Control Forms documenting regulator approval of the verification packages and agreement that the cleanup levels per the 300-FF-1 Record of Decision have been met. It should be noted that the 300-10 and 300-45 sites are actually within the 300-FF-2 Operable Unit but were remediated as a part of 300-FF-1 due to their close proximity to 300-FF-1 sites.

The 300-FF-1 Operable Unit is located in an industrial area in the southeast corner of the U.S. Department of Energy (DOE) Hanford Site in southeastern Washington. The site is north of the City of Richland, and adjacent to the Columbia River. The Phase III Feasibility Study Report for the 300-FF-1 Operable Unit (DOE/RL-94-49) discusses and supports a cleanup standard of 15 mrem/year dose for radioactive constituents in an industrial scenario. This equates to a limit of 350 pCi/g total uranium. The feasibility study, which uses DOE Order 5400.5 as a "To Be Considered" under the CERCLA process, was reviewed by DOE Headquarters, as was the Proposed Plan and the Record of Decision. State of Washington MTCA C standards were used for dangerous constituents. The Record of Decision was approved for signature by DOE Headquarters on June 12, 1996, in a Department of Energy Memorandum from Sally Robison, Director, Office of Northwestern Area Programs, Environmental Restoration to L. McLain, Assistant Manager, Richland Operations Office.

The 15 mrem/year industrial level for 300-FF-1 is well below the 100 mrem/year dose required by DOE Order 5400.5 and was determined using the As Low as Reasonably Achievable (ALARA) philosophy. Since the 300-FF-1 Record of Decision requires continued institutional controls (deed restrictions, etc.) to prevent land uses other than industrial and prevent use of the groundwater, other pathways and land uses are not considered pertinent.

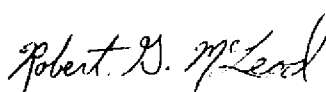
Memorandum to File

-2-

062041 SEP 17 1998

The verification sampling for both radioactive and dangerous constituents was based on the "300-FF-1 Remedial Action Sampling and Analysis Plan DQO Process Summary Report" (BHI-00942) and the Sampling and Analysis Plan in the "300-FF-1 Remedial Design Report/Remedial Action Work Plan" (DOE/RL-96-70)). Both reports were reviewed and approved by DOE and the regulators. Results of the sampling with comparisons to cleanup standards are documented in individual site verification packages, which also were reviewed and approved by DOE and the regulators. In all cases, sampling data verified that each site was below approved cleanup standards.

Therefore, the Ash Pits, 300 Area Process Trenches, 300-44, 300-10, and 300-45 sites have all met the cleanup and release criteria agreed to by the U.S. Environmental Protection Agency, the State of Washington, and the DOE and are considered releasable per the directives of DOE 5400.5 with the restrictions specified in the ROD.



Robert G. McLeod, Project Manager
Remedial Actions Project

Attachments: As stated

cc w/o attachs:

D. R. Einan, EPA

D. E. Gergely, BHI

L. C. Treichel, EM-442

Control Number: 115	300 NPL Agreement/Change Control Form <input type="checkbox"/> Change <input checked="" type="checkbox"/> Agreement <input type="checkbox"/> Information Operable Unit(s): 300-FF-1	Date Submitted: December 9, 1997 Date Approved: 12/17/97
Document Number/Title: 300-FF-1 Ash Pits Verification Package (BHI-01132)		Date Document Last Issued: N/A
Originator: Charlie Johnson		Phone: 373-6372
Summary Discussion: Remediation of the 300-FF-1 Ash Pits was completed in accordance with the 300-FF-1 Remedial Design Report/Remedial Action Work Plan (RDR/RAWP)(DOE/RL-96-70) to verify that no constituents above cleanup standards were present beneath the pits. The ash pit sediments were sampled during the 300-FF-1 OU Phase I Remedial Investigation and found to be nonhazardous, as documented in the Record of Decision for the 300-FF-5 and 300-FF-1 Operable Units. Six random samples were collected from beneath the ash pits sediments during test pit investigations. Analysis of verification samples showed that the soil beneath the ash pits is below the 300-FF-1 cleanup standards. The waste site no longer poses an unacceptable threat to human health or the environment as demonstrated in the referenced verification package.		
Justification and Impact of Change: This form documents agreement among the parties listed below to classify the subject waste site from the TPA solid waste management unit listing as closed out. Final removal from the NPL will occur at a future date.		
V.R. Dronen BHI Project Manager		Date 12/14/97
R.G. McLeod DOE Project Manager		Date 12-17-97
N/A - EPA Lead Site Ecology Project Manager		Date
D.R. Einar EPA Project Manager		Date 17 Dec 97
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3		

BHI-01132
Rev. 0

SEE DOCSOPEN # 53748

Verification Package for the 300-FF-1 Operable Unit Ash Pits



Prepared for the U.S. Department of Energy
Office of Environmental Restoration

Bechtel Hanford, Inc.
Richland, Washington

Control Number: 116	300 NPL Agreement/Change Control Form ___ Change <input checked="" type="checkbox"/> Agreement ___ Information Operable Unit(s): 300-FF-2	Date Submitted: December 9, 1997 Date Approved: 12/17/97
Document Number/Title: 300-FF-2 Waste Site 300-10 Verification Package (BHI-01134)		Date Document Last Issued: N/A
Originator: Charlie Johnson		Phone: 373-6372
<p>Summary Discussion:</p> <p>Remediation of waste site 300-10 was completed in accordance with the 300-FF-1 Remedial Design Report/Remedial Action Work Plan (RDR/RAWP)(DOE/RL-96-70). Waste site 300-10 is part of the 300-FF-2 Operable Unit (OU). During preparation of the RDR/RAWP, a decision was made to include the waste site with 300-FF-1 remediation activities because of its close proximity to the 300 Area Process Trenches and its small size. Contaminated soil was removed from the site and sent to the Environmental Restoration Disposal Facility (ERDF). Analysis of verification samples showed that remaining soil within the area is below the 300-FF-1 cleanup standards. The waste site no longer poses an unacceptable threat to human health or the environment as demonstrated in the referenced verification package.</p>		
<p>Justification and Impact of Change:</p> <p>This form documents agreement among the parties listed below to classify the subject waste site from the TPA solid waste management unit listing as closed out. Final removal from the NPL will occur at a future date.</p>		
V.R. Dronen BHI Project Manager <i>[Signature]</i>		Date 12/16/97
R.G. McLeod DOE Project Manager <i>[Signature]</i>		Date 12-17-97
N/A - EPA Lead Site Ecology Project Manager		Date
D.R. Einan EPA Project Manager <i>[Signature]</i>		Date 17 Dec 97
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3		

BHI-01134
Rev. 0

300-FF-2 Waste Site 300-10 Verification Package

SEE DOCSOPEN # 53750



Prepared for the U.S. Department of Energy
Office of Environmental Restoration

Bechtel Hanford, Inc.
Richland, Washington

Control Number: 117	300 NPL Agreement/Change Control Form __ Change __x__ Agreement __ Information Operable Unit(s): 300-FF-1	Date Submitted: December 9, 1997 Date Approved: 12/27/97
Document Number/Title: 300-FF-1 Waste Site 300-44 Verification Package (BHI-01135)		Date Document Last Issued: N/A
Originator: Charlie Johnson		Phone: 373-6372
<p>Summary Discussion:</p> <p>Remediation of waste site 300-44 was completed in accordance with the 300-FF-1 Remedial Design Report/Remedial Action Work Plan (RDR/RAWP)(DOE/RL-96-70). Contaminated soil was removed from the site and sent to the Environmental Restoration Disposal Facility (ERDF). Analysis of verification samples showed that remaining soil within the area is below the 300-FF-1 cleanup standards. Analysis of samples from the 300-44 overburden stockpile adjacent to the waste site showed that the material was acceptable for use as backfill material. The waste site no longer poses an unacceptable threat to human health or the environment as demonstrated in the referenced verification package.</p>		
<p>Justification and Impact of Change:</p> <p>This form documents agreement among the parties listed below to classify the subject waste site from the TPA solid waste management unit listing as closed out. Final removal from the NPL will occur at a future date.</p>		
V.R. Dronen BHI Project Manager		Date 12/17/97
R.G. McLeod DOE Project Manager		Date 12-17-97
N/A - EPA Lead Site Ecology Project Manager		Date
D.R. Einar EPA Project Manager		Date 17 Dec 97
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3		

BHI-01135
Rev. 0

300-FF-1 Waste Site 300-44 Verification Package

SEE DOCSOPEN # 53752



Prepared for the U.S. Department of Energy
Office of Environmental Restoration

Bechtel Hanford, Inc.
Richland, Washington

Control Number: 118	300 NPL Agreement/Change Control Form __ Change __x_ Agreement __ Information Operable Unit(s): 300-FF-2	Date Submitted: December 9, 1997 Date Approved: 12/17/97
Document Number/Title: 300-FF-2 Waste Site 300-45 Verification Package (BHI-01136)		Date Document Last Issued: N/A
Originator: Charlie Johnson		Phone: 373-6372
<p>Summary Discussion:</p> <p>Remediation of waste site 300-45 was completed in accordance with the 300-FF-1 Remedial Design Report/Remedial Action Work Plan (RDR/RAWP)(DOE/RL-96-70). Waste site 300-45 is part of the 300-FF-2 Operable Unit (OU). During preparation of the RDR/RAWP, a decision was made to include the waste site with 300-FF-1 remediation activities because of its close proximity to the 300 Area Process Trenches and its small size. Contaminated soil was removed from the site and sent to the Environmental Restoration Disposal Facility (ERDF). Analysis of verification samples showed that remaining soil within the area is below the 300-FF-1 cleanup standards. The waste site no longer poses an unacceptable threat to human health or the environment as demonstrated in the referenced verification package.</p>		
<p>Justification and Impact of Change:</p> <p>This form documents agreement among the parties listed below to classify the subject waste site from the TPA solid waste management unit listing as closed out. Final removal from the NPL will occur at a future date.</p>		
V.R. Dronen BHI Project Manager <i>[Signature]</i>		Date 12/17/97
R.G. McLeod DOE Project Manager <i>[Signature]</i>		Date 12-17-97
N/A - EPA Lead Site Ecology Project Manager		Date
D.R. Einan EPA Project Manager <i>[Signature]</i>		Date 17 Dec 97
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3		

BHI-01136
Rev. 0

300-FF-2 Waste Site 300-45 Verification Package

DOCSOPEN# 5 3754



Prepared for the U.S. Department of Energy
Office of Environmental Restoration

Bechtel Hanford, Inc.
Richland, Washington

Control Number: 121	300 NPL Agreement/Change Control Form _ Change _x_ Agreement _ Information Operable Unit(s): 300-FF-1	Date Submitted: March 24, 1998 Date Approved:
Document Number/Title: 300 Area Process Trenches Verification Package (BHI-01164)		Date Document Last Issued: N/A
Originator: J.R. James		Phone: 373-6372
<p>Summary Discussion:</p> <p>Remediation of the 300 Area Process Trenches (300 APT) was completed in accordance with the 300-FF-1 Remedial Design Report/Remedial Action Work Plan (RDR/RAWP)(DOE/RL-96-70) and was performed under CERCLA as an integrated activity with RCRA closure of the TSD unit. Bird screens that covered the trenches, the concrete headworks structure and associated piping, the blockhouse structure, and contaminated soil were demolished or excavated and transported to the ERDF for disposal. During the excavation process, 16 unplanned releases to the process trenches were also remediated. Remaining soil within the ACL and UCL areas of the process trenches and from beneath the concrete aprons that were part of the headworks structure were sampled, analyzed, and found to be below the 300-FF-1 Operable Unit ROD cleanup standards and 300 APT closure plan performance goals. This is demonstrated in the referenced verification package. The process trenches are therefore verified to be remediated and to no longer pose an unacceptable threat to human health or the environment in an industrial setting. Certification of closure will be documented separately by an independent PE and issued to Ecology and Benton County.</p>		
<p>Justification and Impact of Change:</p> <p>This form documents agreement among the parties listed below that closure of the waste site soils has been achieved as discussed above. Final removal from the NPL will occur at a future date.</p>		
V.R. Dronen BHI Project Manager	<i>[Signature]</i>	Date 5/12/98
R.G. McLeod DOE Project Manager	<i>[Signature]</i>	Date 5-13-98
T.A. Wooley Ecology Project Manager	<i>[Signature]</i>	Date 5-13-98
D.R. Einar EPA Project Manager	<i>[Signature]</i>	Date 14 May 98
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3		

BHI-01164
Rev. 0

300 Area Process Trenches Verification Package

SEE DOCSOPEN # 70324



Prepared for the U.S. Department of Energy
Office of Environmental Restoration

Bechtel Hanford, Inc.
Richland, Washington



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

1315 W. 4th Avenue • Kennewick, Washington 99336-6018 • (509) 735-7581

August 10, 1998

Mr. James E. Rasmussen
U.S. Department of Energy
P.O. Box 550, MSIN: A5-15
Richland, WA 99352

Dear Mr. Rasmussen:

Re: Acceptance of Certification of the 300 Area Process Trenches Clean Closure of the
Soil Column and Ground Water Corrective Action Requirements

- References: (1) Letter, R.G. Mcleod, USDOE, to S.M. Alexander, Ecology, "Transmittal of BHI-01171, Rev. 0, Vadose Zone Clean Closure Report for the 300 Area Process Trenches," dated May 27, 1998.
- (2) Letter, R.G. Mcleod, USDOE, to S.M. Alexander, Ecology, "Transmittal of the 300 Area Process Trenches Verification Package, BHI-01164, Rev. 0," dated April 22, 1998.
- (3) Letter, J.E. Rasmussen, USDOE, and M.C. Hughes, BHI, to L.J. Cusack, Ecology, "Certification of Closure for the 300 Area Process Trenches (300 APT)," dated July 9, 1998, Document, "Independent Closure Certification of The 300 Area Process Trenches," Samuel Ashworth, P.E, dated June 22, 1998.
- (4) Letter, J.R. Rasmussen, USDOE, and M.C. Hughes, BHI, to M.N. Jaraysi, Ecology, "Transmittal of DOE/RL-93-73, 300 Area Process Trenches Modified Closure/Postclosure Plan," Revision 2, 97-EAP-657, dated September 12, 1997.
- (5) Letter, M.J. Furman, USDOE, to S.M. Alexander, Ecology, "Exceedance of Concentration Limits at the 316-5 Process Trenches - A Resource Conservation and Recovery Act (RCRA) Facility in a Final Status/Compliance Monitoring Program," CCN 0417146, dated June 16, 1997.

Mr. Rasmussen
August 10, 1998
Page 2

The Washington State Department of Ecology (Ecology) has reviewed and approved the above referenced documents 1, 2, and 3. Ecology concurs with the determination made by the U.S. Department of Energy (USDOE) that clean closure performance standards (pursuant to Washington Administrative Code [WAC-173-303-610]) have been met for the 300 Area Process Trenches (300 APT) soil column. Postclosure requirements for the groundwater will continue as stipulated by the Hanford Facility Resource Conservation and Recovery Act (RCRA) Site Wide Permit, the Ground Water Monitoring Plan for the 300 Area Process Trenches (i.e., WHC-SD-EN-AP-185 Rev. 0A), and the 300-FF-5 Record of Decision (as applicable).

Reference 4 transmitted to Ecology an application for modification of the 300 APT portion of the Hanford Facility Dangerous Waste Permit (Permit). This application was prompted due to exceedances of dangerous constituents (specifically, cis-1, 2-dichloroethene) in the groundwater above action levels prescribed in the Permit, and it fulfilled the requirements of WAC 173-303-645 10(g)(ii) for submittal of an application within 90 days of notification to Ecology of the exceedances. Notification was made to Ecology on June 16, 1997 (Reference 5). The application for modification contained changes to the groundwater monitoring program from a compliance monitoring program to a corrective action program in compliance with WAC 173-303-645(11) and added a corrective action plan.

Since submittal of the application for modification, Ecology has revisited the need for modifying the Permit to reflect corrective action, and has concluded that modification of the Permit is currently not required. The current groundwater monitoring plan for 300 APT that is contained in the Permit (*Groundwater Monitoring Plan for the 300 Area Process Trenches*, WHC-SD-EN-AP-185, Rev. 0A) states in Chapter 6.0 that should exceedances of dangerous constituents occur in the groundwater, a corrective action program will be initiated. It further states that groundwater monitoring will continue as described in Chapters 4.0 and 5.0 of the plan and that corrective action will be accomplished through integration with remediation of the 300-FF-1 (source contamination) and 300-FF-5 (groundwater contamination) Operable Units. Remediation of these operable units has been authorized through a separate Record of Decision. Corrective action for groundwater contamination at 300 APT has been initiated as part of the 300-FF-5 groundwater remedial actions.

Ecology considers the groundwater monitoring plan that is currently effective in the Permit and described in Chapters 4.0 and 5.0 of the *Groundwater Monitoring Plan for the 300 Area Process Trenches*, WHC-SD-EN-AP-185, Rev. 0A, to be adequate for monitoring the effectiveness of corrective action at 300 APT. The groundwater monitoring plan in fact proposed utilization of the existing compliance monitoring program to meet the corrective action monitoring. Integration of corrective action at 300 APT with remedial actions at these operable units was also previously defined in the Permit (for example, Conditions VI.I.B.b and VI.I.B.n). Because these corrective actions are currently in place and were previously defined in the Permit, Ecology concludes that no modification to the Permit is required to modify the groundwater monitoring plan.

Mr. Rasmussen
August 10, 1998
Page 3

Ecology is accepting the independent closure certification of 300 APT based on attainment of clean closure performance standards (specifically non-radioactive contaminants) for the soil column. Therefore, no postclosure care requirements for non-radioactive contaminants are required.

The current closure/postclosure plan that is in effect in the Permit contains information on postclosure requirements for soil column contamination, such as inspections, maintenance, and security measures. This information should be deleted from the text to reflect clean closure of the soil column. USDOE will need to request a permit modification in order to make these changes. The Hanford Facility RCRA Permit Modification Notification Form should be utilized and it should request approval of a Class 3 modification downgraded to a Class 1 because the changes are not specifically listed in Appendix 1 of WAC 173-303-830.

If you have any questions or concerns, please contact me at (509) 736-3012.

Sincerely,



Ted A. Wooley, 300 APT Unit Manager
Nuclear Waste Program

TAW:sdb

cc: Bob Mcleod, USDOE
Dave Einan, EPA
Jeff James, BHI
Administrative Record: 300 APT

BHI-01171
Rev. 0

Vadose Zone Clean Closure Report for the 300 Area Process Trenches

SEE DOCSOPEN # 77296



Prepared for the U.S. Department of Energy
Office of Environmental Restoration

Bechtel Hanford, Inc.
Richland, Washington

CCN: 060322

Environmental
Restoration
Contractor

ERC Team

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Actions: N/A
Class CCN: N/A
OU: 300 FF-1 & 300 FF-2
TSD: N/A
ERA: N/A
Subject Code: 5850

TO: V. R. Dronen H0-09
J. R. James L6-06
T. L. LaFreniere X0-23

DATE: October 6, 1998

COPIES: See Below

FROM: S. K. De Mers *Handwritten signature*
RadCon Engineering
L6-06/531-0729

SUBJECT: **REMOVAL OF THE SOIL CONTAMINATION AREA (SCA) POSTING FROM
MISCELLANEOUS SITES IN THE 300 FF-1 AND THE 300 FF-2 OPERABLE UNITS**

REF: Department of Energy Richland Operations Office Memorandum, *Submittal of Site
Verification Data To The Administrative Record For Miscellaneous Sites In The 300-FF-1
And The 300-FF-2 Operable Units*, CCN 062041, Dated September 17, 1998

The HSRM table 2-4, defines a Soil Contamination Area (SCA) as an area with contaminated soil not releasable in accordance with DOE 5400.5, *Radiation Protection of the Public and the Environment*.

Currently there are several sites within the 300-FF-1 and 300-FF-2 Operable Units posted as SCAs that have been remediated and can be down-posted from SCA status following determination that they are releasable in accordance with DOE 5400.5. The referenced memorandum from DOE-RL lists the sites and states that these sites have all met the cleanup criteria agreed to by the United States Environmental Protection Agency, the State of Washington, and the Department of Energy. This memorandum also states that the sites are considered releasable per the directives of DOE 5400.5.

The listed sites that are posted as SCAs are 316-5 (300 Area Process Trenches) 300-10, 300-44 and 300-45. SCA postings can be removed from these sites. Also listed in the memorandum is the 300 Area Ash Pit, but as this site currently has no radiological posting, it will remain unposted.

Dale Gergely
Approval: D. E. Gergely
BHI Radiological Control Manager

SKD:dlm

V. R. Dronen H0-09
Page 2

CCN: 060322

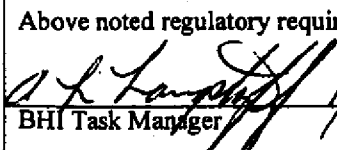
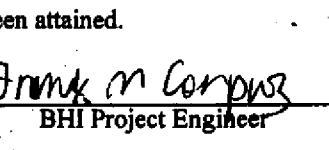

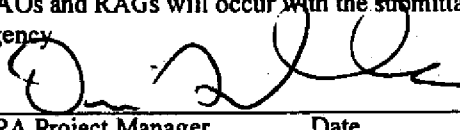
Copies:

R. L. Wardlow T2-05
S. L. Winslow X0-23
A. R. Michael H0-17
P. J. Berthelot L6-06
D. A. Duranceau L6-06
J. A. Lerch L6-06
R. A. Carlson L6-06
M. J. Galgoul H9-03
W. S. Thompson L0-19
F. V. Roeck H0-17
300-FF-1 Project File L6-06
RadConEngineering File/LB X0-23
Document and Info Services H0-09

Waste Site: 116-B-9	BACKFILL CONCURRENCE CHECKLIST (Concurrence to Proceed with Waste Site Backfill Operations)		WIDS No.: 116-B-9	
This checklist is a summary of cleanup verification results for this site. The checklist is intended as an agreement allowing the ERC subcontractor to backfill this site prior to the issuance of the final cleanup verification package. The lead regulatory agency has been provided copies of detailed calculations. The results are summarized below.				
Regulatory Requirement	Remedial Action Goals (RAG)	Results	RAG Attained	Ref.
Direct Exposure – Radionuclides	1. Attain 15 mrem/yr dose rate above background over 1000 years.	1. All individual COPC concentrations are below detection limits, therefore all radionuclide RAGs have been attained.	Yes	
Direct Exposure – Nonradionuclides	1. Attain individual COC RAGs.	1. There are no nonradionuclide COCs or COPCs at this site. Therefore, all nonradionuclide RAGs have been attained.	Yes	
Meet Nonradionuclide Risk Requirements	1. Hazard quotient ratio of <1 for noncarcinogens.	There are no nonradionuclide COCs or COPCs at this site. Therefore, all nonradionuclide RAGs have been attained.	Yes	
	2. Cumulative hazard quotient ratio of <1 for noncarcinogens.			
	3. Excess cancer risk of <1 x 10 ⁻⁶ for individual carcinogens.			
	4. Attain a cumulative excess cancer risk of <1 x 10 ⁻⁵ for carcinogens.			
Groundwater/River Protection – Radionuclides	1. Attain single COC groundwater & river RAGs.	All individual COPC concentrations are below detection limits, therefore all radionuclide RAGs have been attained.	Yes	
	2. Attain National Primary Drinking Water Regulations 4-mrem/yr (beta/gamma) dose standard to target receptor/organ.			
	3. Meet National Primary Drinking Water Regulations 15 pCi/L (alpha activity) standard.			
Groundwater/River Protection – Nonradionuclides	1. Attain individual nonradionuclide groundwater & river RAGs.	1. There are no nonradionuclide COCs or COPCs at this site. Therefore, all nonradionuclide RAGs have been attained.	Yes	
Other Supporting Information	11. Sample variance calculation			A, B
	12. Sample location design.			C
All citations above and references on attached sheet are on record with Bechtel Hanford, Inc., Document and Information Services. Above noted regulatory requirements have been attained.				
<div style="display: flex; justify-content: space-between;"> <div> <i>[Signature]</i> BHI Task Manager Date: 1/11/00 </div> <div> <i>[Signature]</i> BHI Project Engineer Date: 1-11-00 </div> <div> <i>[Signature]</i> DOE Project Manager Date: 1/12/00 </div> </div>				
Given the attached information, DOE can proceed with backfill of the site with minimal risk. Final approval that the site has met RAOs and RAGs will occur with the submittal, review, and approval of the Cleanup Verification Package by the lead regulatory agency.				
<div style="display: flex; justify-content: space-between;"> <div> <i>[Signature]</i> EPA Project Manager Date: 1-20-00 </div> <div> N/A Ecology Project Manager Date: </div> <div> N/A Date: </div> </div>				

Waste Site: 116-B-6B		BACKFILL CONCURRENCE CHECKLIST (Concurrence to Proceed with Waste Site Backfill Operations)		WIDS No.: 116-B-6B	
This checklist is a summary of cleanup verification results for this site. The checklist is intended as an agreement allowing the ERC subcontractor to backfill this site prior to the issuance of the final cleanup verification package. The lead regulatory agency has been provided copies of detailed calculations. The results are summarized below.					
Regulatory Requirement	Remedial Action Goals (RAG)	Results	RAG Attained	Ref.	
Direct Exposure – Radionuclides	1. Attain 15 mrem/yr dose rate above background over 1000 years.	1. There are no radionuclide COCs at this site. Therefore, all radionuclide RAGs have been attained.	Yes		
Direct Exposure – Nonradionuclides	1. Attain individual COC RAGs.	1. All individual COC concentrations are below the RAGs.	Yes	A	
Meet Nonradionuclide Risk Requirements	1. Hazard quotient ratio of <1 for noncarcinogens.	1. All hazard quotient ratios are below 1.	Yes	A	
	2. Cumulative hazard quotient ratio of <1 for noncarcinogens.	2. Cumulative hazard quotient ratio is less than 1 for noncarcinogens.		A	
	3. Excess cancer risk of $<1 \times 10^{-6}$ for individual carcinogens.	3. Excess cancer risk for individual carcinogens are all less than 1×10^{-6} .		A	
	4. Attain a cumulative excess cancer risk of $<1 \times 10^{-5}$ for carcinogens.	4. Cumulative excess cancer risk is less than 1×10^{-5} for carcinogens.		A	
Groundwater/River Protection – Radionuclides	1. Attain single COC groundwater & river RAGs.	There are no radionuclide COCs at this site. Therefore, all radionuclide RAGs have been attained.	Yes		
	2. Attain National Primary Drinking Water Regulations 4-mrem/yr (beta/gamma) dose standard to target receptor/organ.				
	3. Meet National Primary Drinking Water Regulations 15 pCi/L (alpha activity) standard.				
Groundwater/River Protection – Nonradionuclides	1. Attain individual nonradionuclide groundwater & river RAGs.	1. All the groundwater and river RAGs have been attained.	Yes	A	
Other Supporting Information	9. Sample variance calculation			B	
	10. Sample location design			C	
All citations above and references on attached sheet are on record with Bechtel Hanford, Inc., Document and Information Services. Above noted regulatory requirements have been attained.					
BHI Task Manager <i>[Signature]</i>		Date <i>1/11/00</i>	BHI Project Engineer <i>[Signature]</i>		Date <i>1/11/00</i>
			DOE Project Manager <i>[Signature]</i>		Date <i>1/12/00</i>
Given the attached information, DOE can proceed with backfill of the site with minimal risk. Final approval that the site has met RAOs and RAGs will occur with the submittal, review, and approval of the Cleanup Verification Package by the lead regulatory agency.					
EPA Project Manager <i>[Signature]</i>		Date <i>1-20-00</i>	Ecology Project Manager <i>[Signature]</i>		Date <i>N/A</i>
			Ecology Project Manager <i>[Signature]</i>		Date <i>N/A</i>

Waste Site: 116-B-2		BACKFILL CONCURRENCE CHECKLIST (Concurrence to Proceed with Waste Site Backfill Operations)		WIDS No.: 116-B-2	
This checklist is a summary of cleanup verification results for this site. The checklist is intended as an agreement allowing the ERC subcontractor to backfill this site prior to the issuance of the final cleanup verification package. The lead regulatory agency has been provided copies of detailed calculations. The results are summarized below.					
Regulatory Requirement	Remedial Action Goals (RAG)	Results	RAG Attained	Ref.	
Direct Exposure – Radionuclides	1. Attain 15 mrem/yr dose rate above background over 1000 years.	1. Maximum dose calculated by RESRAD is 3.6 mrem/yr (not accounting for clean backfill).	Yes	A	
Direct Exposure – Nonradionuclides	1. Attain individual COC RAGs.	1. All individual COC concentrations are below the RAGs.	Yes	B	
Meet Nonradionuclide Risk Requirements	1. Hazard quotient ratio of <1 for noncarcinogens.	1. All hazard quotient ratios are below 1.	Yes	B	
	2. Cumulative hazard quotient ratio of <1 for noncarcinogens.	2. Cumulative hazard quotient ratio is less than 1 for noncarcinogens.		B	
	3. Excess cancer risk of <1 x 10 ⁻⁶ for individual carcinogens.	3. Excess cancer risk for individual carcinogens are all less than 1 x 10 ⁻⁶ .		B	
	4. Attain a cumulative excess cancer risk of <1 x 10 ⁻⁵ for carcinogens.	4. Cumulative excess cancer risk is less than 1 x 10 ⁻⁵ for carcinogens.		B	
Groundwater/River Protection – Radionuclides	1. Attain single COC groundwater & river RAGs.	1. All single COC Groundwater and river RAGs have been attained.	Yes	C	
	2. Attain National Primary Drinking Water Regulations 4-mrem/yr (beta/gamma) dose standard to target receptor/organ.	2. All organ specific doses are below the 4-mrem/yr dose standard.		C	
	3. Meet National Primary Drinking Water Regulations 15 pCi/L (alpha activity) standard.	3. The alpha activity is 0 pCi/L for all years.		C	
Groundwater/River Protection – Nonradionuclides	1. Attain individual nonradionuclide groundwater & river RAGs.	1. All the groundwater and river RAGs have been attained.	Yes	A,B	
Other Supporting Information	1. Sample variance calculation			D	
	2. Sample location design			E	
All citations above and references on attached sheet are on record with Bechtel Hanford, Inc., Document and Information Services. Above noted regulatory requirements have been attained.					
BHI Task Manager <i>[Signature]</i>		BHI Project Engineer <i>[Signature]</i>	DOE Project Manager <i>[Signature]</i>	Date <i>[Signature]</i>	
Given the attached information, DOE can proceed with backfill of the site with minimal risk. Final approval that the site has met RAGs and RAGs will occur with the submittal, review, and approval of the Cleanup Verification Package by the lead regulatory agency.					
EPA Project Manager <i>[Signature]</i>		Ecology Project Manager <i>[Signature]</i>	Date <i>[Signature]</i>		

Waste Site: 116-B-4	BACKFILL CONCURRENCE CHECKLIST (Concurrence to Proceed with Waste Site Backfill Operations)		WIDS No.: 116-B-4	
This checklist is a summary of cleanup verification results for this site. The checklist is intended as an agreement allowing the ERC subcontractor to backfill this site prior to the issuance of the final cleanup verification package. The lead regulatory agency has been provided copies of detailed calculations. The results are summarized below.				
Regulatory Requirement	Remedial Action Goals (RAG)	Results	RAG Attained	Ref.
Direct Exposure – Radionuclides	1. Attain 15 mrem/yr dose rate above background over 1000 years.	1. Maximum dose calculated by RESRAD is 1.04 mrem/yr (not accounting for clean backfill).	Yes	A
Direct Exposure – Nonradionuclides	1. Attain individual COC RAGs.	1. There are no nonradionuclide COCs at this site. Therefore, all nonradionuclide RAGs have been attained.	Yes	B
Meet Nonradionuclide Risk Requirements	1. Hazard quotient ratio of <1 for noncarcinogens.	There are no nonradionuclide COCs at this site. Therefore, all nonradionuclide RAGs have been attained.	Yes	B
	2. Cumulative hazard quotient ratio of <1 for noncarcinogens.			B
	3. Excess cancer risk of <1 x 10 ⁻⁶ for individual carcinogens.			B
	4. Attain a cumulative excess cancer risk of <1 x 10 ⁻³ for carcinogens.			B
Groundwater/River Protection – Radionuclides	1. Attain single COC groundwater & river RAGs.	1. All single COC Groundwater and river RAGs have been attained.	Yes	C
	2. Attain National Primary Drinking Water Regulations 4-mrem/yr (beta/gamma) dose standard to target receptor/organ.	2. All organ specific doses are below the 4-mrem/yr dose standard.		C
	3. Meet National Primary Drinking Water Regulations 15 pCi/L (alpha activity) standard.	3. The alpha activity is 0 pCi/L for all years.		C
Groundwater/River Protection – Nonradionuclides	1. Attain individual nonradionuclide groundwater & river RAGs.	1. There are no nonradionuclide COCs at this site. Therefore, all nonradionuclide RAGs have been attained.	Yes	A,B
Other Supporting Information	5. Sample variance calculation			D
	6. Sample location design			E
All citations above and references on attached sheet are on record with Bechtel Hanford, Inc., Document and Information Services. Above noted regulatory requirements have been attained.				
<div style="display: flex; justify-content: space-between;"> <div>  BHI Task Manager </div> <div> 1/11/00 Date </div> <div>  BHI Project Engineer </div> <div> 1/11/00 Date </div> <div>  DOE Project Manager </div> <div> 1/12/00 Date </div> </div>				
Given the attached information, DOE can proceed with backfill of the site with minimal risk. Final approval that the site has met RAOs and RAGs will occur with the submittal, review, and approval of the Cleanup Verification Package by the lead regulatory agency.				
<div style="display: flex; justify-content: space-between;"> <div>  EPA Project Manager </div> <div> 1-20-00 Date </div> <div> N/A Ecology Project Manager </div> <div> N/A Date </div> </div>				

Waste Site: 116-B-10	BACKFILL CONCURRENCE CHECKLIST (Concurrence to Proceed with Waste Site Backfill Operations)		WIDS No.: 116-B-10	
This checklist is a summary of cleanup verification results for this site. The checklist is intended as an agreement allowing the ERC subcontractor to backfill this site prior to the issuance of the final cleanup verification package. The lead regulatory agency has been provided copies of detailed calculations. The results are summarized below.				
Regulatory Requirement	Remedial Action Goals (RAG)	Results	RAG Attained	Ref.
Direct Exposure – Radionuclides	1. Attain 15 mrem/yr dose rate above background over 1000 years.	1. Maximum dose calculated by RESRAD is 1.22 mrem/yr (not accounting for clean backfill).	Yes	A
Direct Exposure – Nonradionuclides	1. Attain individual COC RAGs.	1. All individual COC concentrations are below the RAGs.	Yes	B
Meet Nonradionuclide Risk Requirements	1. Hazard quotient ratio of <1 for noncarcinogens.	1. All hazard quotient ratios are below 1.	Yes	B
	2. Cumulative hazard quotient ratio of <1 for noncarcinogens.	2. Cumulative hazard quotient ratio is less than 1 for noncarcinogens.		B
	3. Excess cancer risk of <1 x 10 ⁻⁶ for individual carcinogens.	3. Excess cancer risk for individual carcinogens are all less than 1 x 10 ⁻⁶ .		B
	4. Attain a cumulative excess cancer risk of <1 x 10 ⁻⁵ for carcinogens.	4. Cumulative excess cancer risk is less than 1 x 10 ⁻⁵ for carcinogens.		B
Groundwater/River Protection – Radionuclides	1. Attain single COC groundwater & river RAGs.	1. All single COC Groundwater and river RAGs have been attained.	Yes	C
	2. Attain National Primary Drinking Water Regulations 4-mrem/yr (beta/gamma) dose standard to target receptor/organ.	2. All organ specific doses are below the 4-mrem/yr dose standard.		C
	3. Meet National Primary Drinking Water Regulations 15 pCi/L (alpha activity) standard.	3. The alpha activity is 0 pCi/L for all years.		C
Groundwater/River Protection – Nonradionuclides	1. Attain individual nonradionuclide groundwater & river RAGs.	1. All the groundwater and river RAGs have been attained.	Yes	A,B
Other Supporting Information	13. Sample variance calculation			D
	14. Sample location design			E
All citations above and references on attached sheet are on record with Bechtel Hanford, Inc., Document and Information Services. Above noted regulatory requirements have been attained.				
<div style="display: flex; justify-content: space-between;"> <div> <i>[Signature]</i> BHI Task Manager </div> <div> <i>1/11/00</i> Date </div> <div> <i>From M Corpus</i> BHI Project Engineer </div> <div> <i>1/11/00</i> Date </div> <div> <i>[Signature]</i> DOE Project Manager </div> <div> <i>1/12/00</i> Date </div> </div>				
Given the attached information, DOE can proceed with backfill of the site with minimal risk. Final approval that the site has met RAOs and RAGs will occur with the submittal, review, and approval of the Cleanup Verification Package by the lead regulatory agency.				
<div style="display: flex; justify-content: space-between;"> <div> <i>[Signature]</i> EPA Project Manager </div> <div> <i>1-20-00</i> Date </div> <div> N/A Ecology Project Manager </div> <div> N/A Date </div> </div>				

Waste Site: 116-B-12		BACKFILL CONCURRENCE CHECKLIST (Concurrence to Proceed with Waste Site Backfill Operations)		WIDS No.: 116-B-12	
This checklist is a summary of cleanup verification results for this site. The checklist is intended as an agreement allowing the ERC subcontractor to backfill this site prior to the issuance of the final cleanup verification package. The lead regulatory agency has been provided copies of detailed calculations. The results are summarized below.					
Regulatory Requirement	Remedial Action Goals (RAG)	Results	RAG Attained	Ref.	
Direct Exposure – Radionuclides	1. Attain 15 mrem/yr dose rate above background over 1000 years.	1. Since Uranium values fall below background and all other individual radionuclide COCs are below detection limits, all radionuclide RAGs have been attained.	Yes	A	
Direct Exposure – Nonradionuclides	1. Attain individual COC RAGs.	1. All individual COC concentrations are below the RAGs.	Yes	A	
Meet Nonradionuclide Risk Requirements	1. Hazard quotient ratio of <1 for noncarcinogens.	1. All hazard quotient ratios are below 1.	Yes	A	
	2. Cumulative hazard quotient ratio of <1 for noncarcinogens.	2. Cumulative hazard quotient ratio is below 1.		A	
	3. Excess cancer risk of <1 x 10 ⁻⁶ for individual carcinogens.	3. Excess cancer risk for individual carcinogens are all less than 1 x 10 ⁻⁶ .		A	
	4. Attain a cumulative excess cancer risk of <1 x 10 ⁻⁵ for carcinogens.	4. Cumulative excess cancer risk is less than 1 x 10 ⁻⁵ .		A	
Groundwater/River Protection – Radionuclides	1. Attain single COC groundwater & river RAGs.	Since Uranium values fall below background and all other individual radionuclide COCs are below detection limits, all radionuclide RAGs have been attained.	Yes	A	
	2. Attain National Primary Drinking Water Regulations 4-mrem/yr (beta/gamma) dose standard to target receptor/organ.			A	
	3. Meet National Primary Drinking Water Regulations 15 pCi/L (alpha activity) standard.			A	
Groundwater/River Protection – Nonradionuclides	1. Attain individual nonradionuclide groundwater & river RAGs.	1. All the groundwater and river RAGs have been attained.	Yes	A	
Other Supporting Information	15. Sample variance calculation			B	
	16. Sample location design			C	
All citations above and references on attached sheet are on record with Bechtel Hanford, Inc., Document and Information Services. Above noted regulatory requirements have been attained.					
BHI Task Manager <i>[Signature]</i> 1/11/00		BHI Project Engineer <i>[Signature]</i> 1/11/00		DOE Project Manager <i>[Signature]</i> 1/12/00	
Given the attached information, DOE can proceed with backfill of the site with minimal risk. Final approval that the site has met RAOs and RAGs will occur with the submittal, review, and approval of the Cleanup Verification Package by the lead regulatory agency.					
EPA Project Manager <i>[Signature]</i> 1-20-00		N/A		N/A	
Date		Ecology Project Manager		Date	

Waste Site: 116-B-6A/16	BACKFILL CONCURRENCE CHECKLIST (Concurrence to Proceed with Waste Site Backfill Operations)		WIDS No.: 116-B-6A 116-B-16	
This checklist is a summary of cleanup verification results for this site. The checklist is intended as an agreement allowing the ERC subcontractor to backfill this site prior to the issuance of the final cleanup verification package. The lead regulatory agency has been provided copies of detailed calculations. The results are summarized below.				
Regulatory Requirement	Remedial Action Goals (RAG)	Results	RAG Attained	Ref.
Direct Exposure – Radionuclides	1. Attain 15 mrem/yr dose rate above background over 1000 years.	1. Maximum dose calculated by RESRAD is 10.8 mrem/yr (not accounting for clean backfill).	Yes	A
Direct Exposure – Nonradionuclides	1. Attain individual COC RAGs.	1. All individual COC concentrations are below the RAGs.	Yes	B
Meet Nonradionuclide Risk Requirements	1. Hazard quotient ratio of <1 for noncarcinogens.	1. All hazard quotient ratios are below 1.	Yes	B
	2. Cumulative hazard quotient ratio of <1 for noncarcinogens.	2. Cumulative hazard quotient ratio is 3.23×10^{-3} .		B
	3. Excess cancer risk of $<1 \times 10^{-6}$ for individual carcinogens.	3. Excess cancer risk for individual carcinogens are all less than 1×10^{-6} .		B
	4. Attain a cumulative excess cancer risk of $<1 \times 10^{-3}$ for carcinogens.	4. Cumulative excess cancer risk is 3.23×10^{-9} .		B
Groundwater/River Protection – Radionuclides	1. Attain single COC groundwater & river RAGs.	1. All single COC Groundwater and river RAGs have been attained.	Yes	C
	2. Attain National Primary Drinking Water Regulations 4-mrem/yr (beta/gamma) dose standard to target receptor/organ.	2. All organ specific doses are below the 4-mrem/yr dose standard.		C
	3. Meet National Primary Drinking Water Regulations 15 pCi/L (alpha activity) standard.	3. The alpha activity is 0 pCi/L for all years.		C
Groundwater/River Protection – Nonradionuclides	1. Attain individual nonradionuclide groundwater & river RAGs.	1. All the groundwater and river RAGs have been attained.	Yes	A,B
Other Supporting Information	7. Sample variance calculation			D
	8. Sample location design			E
All citations above and references on attached sheet are on record with Bechtel Hanford, Inc., Document and Information Services. Above noted regulatory requirements have been attained.				
<div style="display: flex; justify-content: space-between;"> <div> <i>a. L. Langstaff</i> BHI Task Manager </div> <div> <i>Frank M. Corpus</i> BHI Project Engineer </div> <div> <i>1-11-00</i> Date </div> <div> <i>[Signature]</i> DOE Project Manager </div> <div> <i>1/12/00</i> Date </div> </div>				
Given the attached information, DOE can proceed with backfill of the site with minimal risk. Final approval that the site has met RAOs and RAGs will occur with the submittal, review, and approval of the Cleanup Verification Package by the lead regulatory agency.				
<div style="display: flex; justify-content: space-between;"> <div> <i>[Signature]</i> EPA Project Manager </div> <div> <i>1-20-00</i> Date </div> <div> N/A Ecology Project Manager </div> <div> N/A Date </div> </div>				

BC Group 3
Overburden

BACKFILL CONCURRENCE CHECKLIST

(Authorization to use overburden soils as backfill material)

used as backfill in:
116-C-2A, 116-C-2B,
116-C-2C, 116-B-2,
116-B-3, 116-B-4,
116-B-9, & 116-B-12

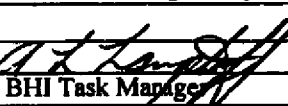

This checklist is a summary of the attainment of the Remedial Action Goals for this overburden soil. The checklist is intended as an agreement allowing the ERC subcontractor to use this soil as backfill prior to the issuance of the final cleanup verification package. The evaluations performed in the referenced calculations were based on a "worst case scenario" such that the backfill can be placed in any one or all of the sites listed above. The lead regulatory agency has been provided copies of detailed calculations. The results are summarized below.

Regulatory Requirement	Remedial Action Goals (RAG)	Results	RAG Attained	Ref.
Direct Exposure – Radionuclides	1. Attain 15 mrem/yr dose rate above background over 1000 years.	1. Maximum dose calculated by RESRAD is 14.96 mrem/yr (See Special Conditions Section)	Yes	A
Direct Exposure – Nonradionuclides	1. Attain individual COC RAGs.	1. All individual COC concentrations are below the RAGS.	Yes	B
Meet Nonradionuclide Risk Requirements	1. Hazard quotient ratio of <1 for noncarcinogens.	1. All hazard quotient ratios are below 1.	Yes	B
	2. Cumulative hazard quotient ratio of <1 for noncarcinogens.	2. Cumulative hazard quotient ratio is 1.17×10^{-2} .		B
	3. Excess cancer risk of $<1 \times 10^{-6}$ for individual carcinogens.	3. Excess cancer risk for individual carcinogens are all less than 1×10^{-6} .		B
	4. Attain a cumulative excess cancer risk of $<1 \times 10^{-5}$ for carcinogens.	4. Cumulative excess cancer risk is 1.71×10^{-5} .		B
Groundwater/River Protection – Radionuclides	1. Attain single COC groundwater & river RAGS.	1. No COCs from overburden reached groundwater or the river, thus the RAGs have been attained.	Yes	A
	2. Attain National Primary Drinking Water Regulations 4-mrem/yr (beta/gamma) dose standard to target receptor/organ.	2. No COCs from overburden reached groundwater or the river, thus the RAGs have been attained.		A
	3. Meet National Primary Drinking Water Regulations 15 pCi/L (alpha activity) standard.	3. No COCs from overburden reached groundwater or the river, thus the RAGs have been attained.		A
Groundwater/River Protection – Nonradionuclides	1. Attain individual nonradionuclide groundwater & river RAGs.	1. All the groundwater and river RAGs have been attained.	Yes	A,B
Other Supporting Information	1. Sample variance calculation			C
	2. Sample location design			D

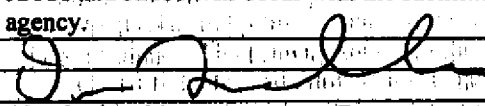
Special Conditions: The 100 BC Group 3 overburden is unique in that the Cs-137 concentrations in one sampling area are elevated in comparison to the sites that will receive the material as backfill. Each of the sites listed would meet the RAGs if the overburden soils were used as the primary source of backfill, however, the calculated dose at each site would be higher than the dose from the side walls alone. The primary source of the elevated dose is a sampling area for overburden soils excavated from the 116-B-2, 116-B-3, and 116-B-4 sites. To mitigate this concern, EPA and DOE have requested that the portion of the 116-B-2, 116-B-3, and 116-B-4 overburden pile with elevated Cs-137 be placed in the deep zone (i.e., below 15 feet) in sites such as 116-C-2ABC.

During remedial action, the retrieval of clean overburden was guided by field screening (sodium iodide detectors). At one point in the process, elevated contamination was detected on the 116-B-2, 116-B-3, and 116-B-4 overburden pile. Operations were ceased immediately and the contaminated soils were excavated, loaded, and disposed of at ERDF. Sodium iodide field screening was used to confirm that the contaminated soils were removed from the stockpile. No additional soils were placed on the pile after this event. The current level of Cs-137 from the sample area of concern is believed to be residual from this event.

All citations above and references on attached sheet are on record with Bechtel Hanford, Inc., Document and Information Services. Above noted regulatory requirements have been attained.

	1/11/00	Frank M. Corpus	1/11/00		1/17/00
BHI Task Manager	Date	BHI Project Engineer	Date	DOE Project Manager	Date

Given the attached information, DOE can proceed with backfill of the site with minimal risk. Final approval that the site has met RAOs and RAGs will occur with the submittal, review, and approval of the Cleanup Verification Package by the lead regulatory agency.

	1-2-00	N/A	N/A
EPA Project Manager	Date	Ecology Project Manager	Date

Backfill Concurrence Checklist References

Attachment/ Reference	Description
A	RESRAD Calculations for Disposition of Group 3 Overburden, 0100B-CA-N0020, Rev. 0
B	95% UCL Calculations for Compliance with Cleanup Standards (Group 3 B/C Overburden), 0100B-CA-V0086, Rev. 0
C	BC Overburden Sample Variance Calculations, 0100B-CA-V0055, Rev. 0
D	B/C Small Sites Overburden Area Sampling Locations, 0100B-CA-V0050, Rev. 1

Distribution**Unit Mangers' Meeting: 100 Area Remedial Action Unit/Source Operable Units**

Glenn Goldberg	DOE-RL, RP (H0-12)
Owen Robertson.....	DOE-RL, RP (H0-12)
Chris Smith.....	DOE-RL, RP (H0-12)
Lisa Treichel	DOE-HQ (EM-442)
Wayne Soper.....	WDOE (Kennewick) (B5-18)
Rick Bond	WDOE (Kennewick) (B5-18)
Lynn Albin.....	Washington Dept. of Health
Richard Jauish.....	Washington Dept. of Health
John April.....	BHI (H0-17)
Dave Blumenkranz	CHI (H9-02)
Ella Coenenburg.....	BHI (H9-03)
Frank Corpuz.....	BHI (X9-06)
Rick Donahoe.....	BHI (H0-17)
Jon Fancher.....	CHI (H9-02)
Dennis Falk.....	(B5-01)
Alvina Goforth.....	BHI (H0-09)
Chris Kemp.....	BHI (S3-20)
Tom Kisenwether.....	BHI (X9-10)
Alvin Langstaff.....	BHI (X3-40)
Tamen Rodriguez.....	BHI (H0-17)
Fred Roeck.....	BHI (H0-17)
Mark Sturges	CHI (X3-40)
Joan Woolard	BHI (H0-02)

Please inform Tamen Rodriguez (372-9562) – BHI (H0-17)
Of deletions or additions to the distribution list.